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BY:

*Renee Conti*

Date:

*June 6, 2005*

**MAIL STOP APPEAL BRIEF - PATENTS**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In Re Patent Application of:  
Ulrich Reiners et al.

Conf. No.: 4175

: Group Art Unit: 1773

Appln. No.: 09/851,460

: Examiner: Kevin R. Kruer

Filing Date: May 8, 2001

: Attorney Docket No.: 9784-3U2 (TH8002US/B)

Title: THERMO-FORMABLE MULTILAYER BARRIER FILM WITH THE  
APPEARANCE AND TEXTURE OF PAPER

**ON APPEAL FROM THE PRIMARY EXAMINER TO THE BOARD OF PATENT  
APPEALS AND INTERFERENCES**

**APPELLANT'S REPLY BRIEF UNDER 37 C.F.R. § 41.41**

This is in response to the Examiner's Answer ("Answer") dated April 5, 2005 in the appeal of the above application. This reply brief is being timely filed by June 6, 2005, June 5 being a Sunday.

## **I. STATUS OF CLAIMS**

The Examiner has indicated previously rejected and appealed claims 12, 15-17 and 20 to be allowable (Answer, page 2, Section (3)).

Claims 1-11, 13, 14, 18 and 19 remain rejected (Answer, page 2, Section (3)).

## **II. STATUS OF REJECTIONS**

Aside from the withdrawal of the rejections of now allowable claims 12, 15-17 and 20, the Examiner has also withdrawn all of the rejections based on U.S. Patent 5,011,785 of Shirmer, namely Grounds of Rejections C, D, E, F, and part of G.

Therefore, the only remaining Grounds of Rejection are grounds A, B, H and the part of G based on Farrell in view of Miyazaki (Answer, page 3, Section (6)).

## **III. REPLY TO EXAMINER'S ARGUMENTS**

Appellant has already responded to the remaining Examiner's Grounds of Rejection (Answer, pages 4-7, Section (9) 1. – 4.) in the main Appeal Brief, and those responses will not be repeated here.

The following replies are directed to the Examiner's Response to Argument (Answer, pages 7-14, Section (10)) and the last paragraph of Section (9) 4. (Answer, page 7, second full paragraph). It is noted that the Examiner's "Response to Arguments in subheading (E)" (Answer, pages 13-14) is actually a response to Appellant's argument in subheading H (i.e., the Ground of Rejection based on Bochow in view of Hattori).

### **1. Thermoformability on Form-Fill-Seal (FFS) Machines**

On the one hand, the Examiner complains that Appellant's discussions relating to thermoformability of the claimed multilayer barrier films are not pertinent, because the claims do not recite thermoforming of the multilayer film on FFS machines (Answer, paragraph bridging pages 7 and 8). This complaint is clearly incorrect, since claims 13 and 14 recite the film in the form of packaging formed on an FFS machine.

On the other hand, the Examiner acknowledges that Bochow does not teach that the laminate (multilayer barrier film) may be formed on an FFS machine (and Hattori does not either, because Hattori does not even teach a film with a sealing layer). However, the Examiner holds that processing limitations do not patentably distinguish a claimed product from a prior art product, and therefore the Bochow laminate is identical to the claimed laminate formed on an FFS machine (Answer, page 7, second full paragraph).

The Examiner cannot have it both ways. First, Appellant is not relying on a processing limitation *per se*. Claims 13 and 14 recite the formation of packaging materials on an FFS machine in order to demonstrate the property that the multilayer barrier film of claim 1 is especially thermoformable on an FFS machine. That property is not taught by either Bochow or Hattori (the only combination of references on which claims 13 and 14 are presently rejected). If the Examiner had thought that that was an improper way to claim this feature, he should have objected previously or suggested a different form of claims.

Second, Bochow's laminate is not "identical to the claimed laminate formed on an FFS machine." If it were, the Examiner could have rejected the claimed structure under 35 U.S.C. § 102, not § 103. Since the laminate of Hattori has no sealing layer, it is not useable on an FFS machine and therefore does not make up for the deficiencies of Bochow.

As to the other rejected claims, besides claims 13 and 14, it is submitted that thermoformability of the multilayer films on an FFS machine and the special advantages of the claimed film are still properties of the film which must be considered, whether claimed or not. Thus, if the prior art does not teach or inherently possess the properties obtained by the claimed films, then the Examiner has not met his burden of showing that all of the features of the claimed structure are taught by the prior art.

It is noted with respect to the claims rejected over the combination of Farrell and Miyazaki (Grounds of Rejection A, B and part of G) that the Examiner concedes that Miyazaki is silent on the influence of the thickness ratio on the processability on FFS machines (Answer, page 13, first paragraph). The Examiner again argues that the claims are not limited to multilayer films processed on FFS machines and further contends that there is no evidence of

record that demonstrates that the claimed multilayer film has the unexpected property of being processable on FFS machines.

This position of the Examiner again ignores the properties and advantages of the claimed structure and fails to take into consideration the experimental data presented in the application and in the two Bernig Declarations (Appendices B1 and B2) which are summarized in Section VIII.1.-3 and Table I at pages 5-10 of Appellant's main Brief. All of these data relate to experiments with multilayer films according to the invention and comparative films processed on FFS machines, which demonstrate the advantages of the claimed structures in allowing paper-like appearance after thermoforming, the possibility of thermoforming within a broad temperature range, and the possibility of processing at a high packaging speed. No such properties are taught or suggested by the prior art, so that these properties are truly unexpected.

## **2. Properties of the Claimed Multilayer Barrier Films**

The Examiner takes the position that the claims are not limited in any way with regard to properties (i) – (v) listed at the top of page 6 of Appellant's main Brief. The Examiner therefore holds that these properties fail to distinguish the claimed multilayer film from those taught in the prior art and further contends that the claimed films do not show “unexpected results” with respect to these properties (Answer, page 8, last three paragraphs and page 11, first full paragraph).

The structural features of claim 1 of the present application are listed in outline form at the top of page 2 of Appellant's Brief. Surprisingly, as demonstrated by the comparative experimental evidence submitted by Appellant in the application (page 10) and in the Bernig Declarations (Appendices B1 and B2) and summarized in Table I at page 8 of Appellant's main Brief, the claimed structural features result in achieving the special properties (i) – (v), which are listed again below for convenience:

- (i) the paper-like appearance should be maintained after thermoforming;
- (ii) thermoforming should be possible within a broad temperature range;
- (iii) processing should be possible at a high packaging speed;

- (iv) printing should be easy with high precision and adhesion; and
- (v) the surface of the film should allow piling-up of many packages during storage.

Thus, when the set of structural features claimed is not present, properties (i) – (v) are not achieved. In other words, the claimed structural properties are critical to achieving the above properties. Even if it is assumed that one or more combinations of the prior art relied upon by the Examiner teaches or suggests all of the claimed structural features, the combination or combinations do not render the presently claimed invention obvious, because the above properties (i) – (v) are not taught or inherently possessed by the prior art.

Therefore, these properties are unexpected, and since they are inherently produced by the claimed structural features, it is not necessary to explicitly mention any of these properties in the claims. Accordingly, the Examiner's position that the claims are not limited with respect to these properties and therefore fail to distinguish the claimed multilayer film from the prior art is unwarranted and should be overruled.

### **3. The Change of More Than One Variable in Experiments**

The Examiner argues that the experimental results presented by Appellant are not persuasive and therefore fail to demonstrate the relationship between the properties of the film and the claimed thickness ratio, because more than one variable is changed in each of the examples. Because of these multiple variables, the Examiner contends that it is impossible to determine if a distinction that might exist between the inventive examples and the comparative examples is a result of the claimed thickness ratio. (Answer, pages 9-10, end of each of four full paragraphs on those pages).

This issue was previously raised by the Examiner during prosecution of this application after submission of the first Bernig Declaration (Appendix B1) and was specifically and satisfactorily addressed in the second Bernig Declaration (Appendix B2, page 6, paragraph 5.3(a)). As pointed out in the second Bernig Declaration, it is impossible to keep all variables but one constant and still show a wide range of data points. Moreover, in view of the interdependence of the layer thicknesses and the thickness ratio, it is impossible to change only a single one of these parameters. For example, if the thickness of any one of the layers is changed,

this will also change the total thickness and the thickness ratio. Similarly, if the total thickness of the unfilled layers is kept constant, the thickness of the filled layer must be changed in order to change the thickness ratio of the unfilled layers to the filled layer. At the same time, the total thickness of the film will inevitably change.

In order to address this issue, Mr. Bernig attempted to keep as many variables constant as possible. In particular, in the tests of the second Bernig Declaration, the thickness of the unfilled layers was kept essentially constant at 30-35 $\mu$ m. Moreover, as can be seen from the summary of all experiments in Table 1 at page 8 of Appellant's main Brief, the sum of the thicknesses of all of the unfilled layers (lines 2 through 6 of Table 1) was maintained essentially in the range of about 30-50 $\mu$ m, while the thickness of the filled layer was changed over a wide range in order to change the total thickness and the thickness ratio.

The validity of Appellant's experimental results and their evidentiary value in showing critical or unexpected results are further enhanced by the fact that the critical range falls in the middle of the ranges tested, rather than at one or the other end, so that the results are not simple linear progressions of the important properties of the claimed structure. Accordingly, the Examiner's contention in this regard is unwarranted and should be overruled.

#### **4. Paper-Like Appearance**

The Examiner contends that the test to determine the paper-like appearance of the claimed multilayer barrier films is subjective, and that there is no standard which one skilled in the art could use to determine if a film had a "paper-like" appearance (Answer, page 9, first full paragraph). While Appellant concedes that this test is somewhat subjective, that does not necessarily render it an invalid test, since one skilled in the art will generally recognize what is paper-like and what has a plastic appearance.

In any event, Mr. Bernig also addressed this issue in the second Bernig Declaration (see second Bernig Declaration, pages 5-6, paragraph 4.2, TABLE 2, and paragraph 5.1 and 5.2). In the tests described, tabulated and discussed in these two pages, an attempt was made to quantify the importance of paper-like properties of the claimed multilayer barrier film. In particular, the paper-like appearance was quantified in terms of surface tension, average surface roughness

depth and surface slip. These test results and discussions show that the claimed films not only have better appearance from a customer viewpoint, but also have better printing properties and better storage properties due to the better texture and surface roughness, both of which also contribute to the appearance of paper.

Therefore, the Examiner's objection to a subjective term or property is unwarranted and should be overruled.

## **5. The Number of Layers in Miyazaki**

Appellant pointed out in its main Brief that the Miyazaki reference is directed to a two-layer film, which fails in several respects to provide relevant teachings to the presently claimed film which contains at least three layers. The Examiner now attempts to draw an inference from Miyazaki that Miyazaki actually teaches that two films with a thickness  $X$  is equally as useful as one film with a thickness  $2X$ , and would be expected to have the same gloss and opaqueness. The Examiner concludes that the number of layers comprising the unfilled portion is inconsequential, and notes that Miyazaki teaches at column 7 that additional unfilled layers may be present in the multilayer film (Answer, page 12).

This argument of the Examiner is total speculation and hindsight based upon the disclosure of the present application. There is no such implication in Miyazaki, and a careful reading of the paragraph relied upon by the Examiner (column 7, lines 33-58) shows that a possible three-layer structure proposed by Miyazaki would have no paper-like appearance at all, since the filled layer A would be sandwiched between two unfilled or substantially unfilled layers B, i.e., both of its surfaces would be covered by unfilled layers which have a plastic appearance. Therefore, the Examiner's reliance on Miyazaki is totally improper and irrelevant to the presently claimed invention, so that the rejections based on Miyazaki should be reversed.

## **6. Arguing References Individually**

The Examiner chastises Appellant at several points (Answer, top of page 11, paragraph bridging pages 13 and 14, and bottom of page 14) for arguing against the cited references individually, citing the proposition that one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references.

This argument of the Examiner totally misses the point of Appellant's discussion of the references. The references were discussed individually in order to show that they were not properly combinable and/or that even the total teachings of the references did not teach all of the claimed elements, which is a primary requirement for a combination of references rejection. Therefore, the Examiner's objections to these arguments of Appellant are unfounded and should be ignored.

## V. CONCLUSION

In view of the above replies to the Examiner's Answer, the remaining rejections of the claims are still improper for the reasons set forth in Appellant's main Brief, and should be reversed.

Respectfully submitted,

ULRICH REINERS ET AL.

June 6, 2005  
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